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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,281	09/01/2000	John M. Sedivy Ph.D.	3564/1010	5838

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PALMER & DODGE, LLP  
KATHLEEN M. WILLIAMS  
111 HUNTINGTON AVENUE  
BOSTON, MA 02199

EXAMINER
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YU, MISOOK

ART UNIT	PAPER NUMBER
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1642

DATE MAILED: 08/14/2003

23

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/654,281

Applicant(s)

SEDIY PH.D. ET AL.

Examiner

MISOOK YU, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 January 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 1-32 and 38-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☒ Interview Summary (PTO-413) Paper No(s) 22
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other:

### **DETAILED ACTION**

The non-responsive amendment (Paper No. 20) mailed on 5-19-2003 is vacated in response to the interviews (Paper No. 21 and 22). See the attached interview summary (Paper No. 22). Amendment filed 1/17/2003 is acknowledged and the amended claims will be examined.

### ***Election/Restrictions***

Claims 1-32, and 38-45 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 11.

Claims 1-45 are pending and claims 33-37 are examined on merits.

### ***Claim Rejections - 35 USC § 112***

Rejection of claims 33-37 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention **is moot** because the claims no longer recite the rejected limitations.

Claims 33-37 remain rejected for reason of record under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant argues that

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"RKIP sensitive kinase" is amended to "a signal transduction kinase that binds an RKIP family member", the terms "signal transduction kinase that binds to an RKIP family" and "RKIP family" are clearly defined, a list of signal transduction kinases are disclosed, Example 1 teaches a method of identifying RKIP interacting proteins that could be used to determine if any candidate protein interacts with RKIP, the specification teaches a plurality of signal transduction kinases that bind an RKIP family member in addition to Raf-1, as well as method of detecting additional RKIP-sensitive kinases. These arguments have been fully considered but unpersuasive because the instant specification discloses only two such member i.e., Raf-1 and MEK that bind to a RKIP family. The specification defines the genus by function i.e., what it does. However, the specification does not teach what that material consists of. How to identify that material and description of what it does is not seen as a description of that material. It is concluded that the specification provides evidence for two species, Raf-1 and MEK that binds to RKIP family member.

The rejection of the claim under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement is withdrawn because applicant's argument that the specification teaches a use of instant invention without worrying about cell's membrane barrier is persuasive.

### ***Claim Rejections - 35 USC § 102***

Claims 33, 34, 36, and 37 remain rejected under 35 U.S.C. 102 (b) as being anticipated by Jelinek et al (March 1996, Molecular and Cellular Biology, vol. 16, pages 1027-1034).

Applicant argues that the prior art does not teach the agent (PTP-IB) increases or inhibits the activity of a polypeptide comprising an RKIP motif so as to modulate the activity of a signal transduction pathway that is responsive to an RKIP family protein. Whether Jelkinek et al is a 102(b) art or not is critically dependent upon the meaning of "the activity of a polypeptide comprising an RKIP motif". Since applicant emphasizes that "agent" means a composition that has the capacity to modify bioactivity of a nucleic acid encoding or polypeptide comprising an RKIP motif so as to modulate the activity of a signal transduction pathway that is responsive to an RKIP family protein, the agent in the newly amended base claim is not limited to agonists and/or antagonist of RKIP protein. The Office interprets "the activity of a polypeptide comprising an RKIP motif" in light of the specification at Figs 1-10; the specification teaches that the activity of a polypeptide comprising an RKIP motif is to suppress Raf-1 kinase activity and/or suppress MEK signaling, leading to suppression of AP-1 dependent transcription. The specification especially at Fig. 8 and Example 5 at page 82 and 83, Fig. 5, and page 83, 1<sup>st</sup> paragraph, and Fig. 1 teaches that the human RKIP protein inhibits Raf-1 kinase activity and disrupts interaction of Raf-1 kinase and MEK and, that human RKIP protein comprises an RKIP motif. Also note the publications of inventors, especially the titles of Yeung et al (1999, Nature, vol 401, pages 173-7) and Yeung et al (May 2000, Molecular and Cellular Biology, vol. 21, pages 7207-17). Therefore, an agent that increases or decreases the activity of a polypeptide comprising an RKIP motif is interpreted as any agent that suppress Raf-1 kinase activity or suppress MAP kinase signaling since those two appear to be the main activities of a polypeptide containing RKIP motif. The prior

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art teaches an agent that suppresses the phosphorylation activity of raf-1 (a signal transduction kinase) by contacting said kinase with an agent (i.e., PTP-1B). Note lane 2 of Fig. 3 and left column under the subtitle "Inactivation of Raf-1 from Ras-transformed cell membranes by PTP-1B at page 1030. The ability of Raf-1 capable of binding RKIP family member is the inherent property of the protein as evidenced by the inventor's discovery. In summary, the prior art teaches a method of inhibiting the phosphorylation activity of a signal transduction kinase (Raf-1) that binds to RKIP family member comprising the step of contacting said transduction kinase with an amount of an agent inhibits the activity of said kinase. Applicant does not present any evidence that the agent of prior art is excluded from the genus of agent claimed in the instant invention. Further, to determine whether the material of the prior art is excluded from the "agent" of the instant invention requires a laboratory experiment that the Office cannot conduct due to lack of such facility. Applicant is invited to present scientific evidence that material of the prior art does not meet the limitation of "an agent" defined in the instant claim.

Claims 33, and 36 remain rejected under 35 U.S.C. 102 (e) as being anticipated by US Pat. 6,187,799 (issued Feb. 13, 2001, filed May 22, 1998).

Applicant argues that the agents of the prior art do not increase or inhibit the activity of a polypeptide comprising an RKIP motif. This argument is not persuasive for two main reasons. First, the specification as a whole says that inventors do not know any agonist or antagonist to RKIP protein but want to screen them using RKIP protein. Second, applicant argues at the paragraph bridging pages 8 and 9 of Paper No. 19,

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amendment filed on 1-17-2003 that "one of skill in the art would accept that changes in apoptosis and proliferation resulting from modulation of the activity of a kinase are due to changes in kinase activity". Third, the description of the "agent" at page 15 and 16 of the specification as emphasized by applicant in the amendment suggests that as long as an agent inhibits raf-1 kinase activity such a way that leads to suppression of proliferation, it meets the limitation of an agent in the base claim. The Office maintains that the agent of the prior art meets the limitation of instant claims since the agents accomplish the preamble of the instant claims by the active steps of the instant invention and the agent increase the activity of RKIP protein (i.e., suppress Raf-1 mediated signaling).

#### **NEW GROUNDS OF REJECTION**

##### ***Claim Rejections - 35 USC § 112***

Claims 33-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 33 recites the limitation "the activity" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 33 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim is interpreted as drawn to method using

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**a genus of agents** that increase or inhibit the activity of a polypeptide comprising an RKIP motif for the purpose stated in the preamble i.e., inhibiting the phosphorylation activity of a signal transduction kinase that binds said polypeptide. This rejection is based on the Office's interpretation of "an agent that increase activity of a polypeptide comprising an RKIP motif" as agonists to said polypeptide, and "an agent that decrease activity of a polypeptide comprising an RKIP motif as antagonists to said polypeptide". The specification fails to teach structure, formula, or chemical name of any RKIP agonists and/or antagonists capable accomplishing the purpose in preamble of the claims, other than saying that screening such agonists and/or antagonists are possible using various art known assays using RKIP protein or DNA construct encoding said protein in said assays. The entire specification is about inventors' discovery of a new function of phosphatidylethanolamine-binding protein (a.k.a., RKIP protein) in modulating Raf-1 and MEK in signal transduction pathway. With that discovery, inventors want to screen agents that modulate activity of RKIP protein using various art-known assays. Instant Examples 2 and 3 at pages 77-80, and Figs. 2 and 3 teach inhibition of RKIP activity using either anti-RKIP antibody or the antisense, which leads to enhancement of Raf-1 phosphorylation activity. Therefore, the antisense and the antibody disclosed in the instant specification could be not used to accomplish the purpose stated in the preamble of the claims. The specification fails to describe "agent" that are agonist and/or antagonists that could accomplish the purpose set out in preamble of the claim. The specification mostly describes how to find "candidate agents" using assays involving RKIP protein.

Claims 33-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **This is new matter rejection.** This rejection is based on the interpretation of the newly added limitation in the base claim "agent that increase or inhibits the activity of a polypeptide comprising an RKIP motif" as saying that RKIP protein modulates its own activity because claim 35 says "the agent" in the base claim is a RKIP protein. Applicant is requested to point out in the originally filed specification the support for a RKIP protein modulating its own activity.

#### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

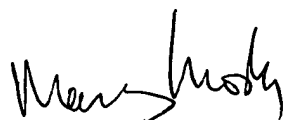
Any inquiry concerning this communication or earlier communications from the examiner should be directed to MISOOK YU, Ph.D. whose telephone number is 703-308-2454. The examiner can normally be reached on 8 A.M. to 5:30 P.M., every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony C Caputa can be reached on 703-308-3995. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Misook Yu

August 4, 2003

  
MARY E. MOSHER  
PRIMARY EXAMINER  
GROUP 1800 1600